

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C.20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 26 May 2000 (26.05.00)	
International application No. PCT/GB99/03280	Applicant's or agent's file reference KR/P32152
International filing date (day/month/year) 05 October 1999 (05.10.99)	Priority date (day/month/year) 08 October 1998 (08.10.98)
Applicant COGHLAN, Matthew, Paul et al	

1. The designated Office is hereby notified of its election made:

☒

in the demand filed with the International Preliminary Examining Authority on:

03 May 2000 (03.05.00)

☐

in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was☐

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Olivia RANAIVOJAONA Telephone No.: (41-22) 338.83.38
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PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT
OR THE DECLARATION

(PCT Rule 44.1)

To:
SmithKline Beecham p.l.c.
Corporate Intellectual Property
Attn. Rutter, Keith
Two New Horizons Court
Brentford
Middlesex TW8 9EP
UNITED KINGDOM

Date of mailing
(day/month/year) 27/04/2000

Applicant's or agent's file reference

KR/P32152

FOR FURTHER ACTION See paragraphs 1 and 4 below

International application No.

PCT/GB 99/03280

International filing date
(day/month/year)

05/10/1999

Applicant

SMITHKLINE BEECHAM PLC et al.

1. ☒ The applicant is hereby notified that the International Search Report has been established and is transmitted herewith.
Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland
Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no International Search Report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Further action(s):** The applicant is reminded of the following:

Shortly after 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

Within 19 months from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within 20 months from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the International Searching Authority



European Patent Office, P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

John De Bruijn

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the same time of filing the amendments with the International Bureau, also file a copy of such amendments with the International Preliminary Examining Authority (see Rule 62.2(a), first sentence).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, where upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.

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REC'D 21 DEC 2000

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference KR/P32152	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB99/03280	International filing date (day/month/year) 05/10/1999	Priority date (day/month/year) 08/10/1998
International Patent Classification (IPC) or national classification and IPC C07D207/00		
Applicant SMITHKLINE BEECHAM PLC et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 9 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☒ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 03/05/2000	Date of completion of this report 19.12.2000
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Cortés, J Telephone No. +49 89 2399 8206 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB99/03280

I. Basis of the report

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).)*

Description, pages:

1-119 as originally filed

Claims, No.:

1-23 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB99/03280

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	3-4, 6-11
	No:	Claims	1-2, 5, 12-23
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-23
Industrial applicability (IA)	Yes:	Claims	2-17, 22-23
	No:	Claims	1, 18-21

2. Citations and explanations see separate sheet

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

and / or

2. Non-written disclosures (Rule 70.9)

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/03280

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

- D1: DATABASE CHEMABS [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US ZHANG, GUO-LIN ET AL: 'Alkaloids from Hypecoum leptocarpum' retrieved from STN Database accession no. 124:82090 XP002135369 & PHYTOCHEMISTRY (1995), 40(6), 1813-16
- D2: US-A-3 335 147 (M.J. KARTEN) 8 August 1967 (1967-08-08)
- D3: EP-A-0 328 026 (HOFFMANN LA ROCHE) 16 August 1989 (1989-08-16)
- D4: DE 40 05 969 A (BOEHRINGER MANNHEIM GMBH) 29 August 1991 (1991-08-29)
- D5: DE 40 05 970 A (BOEHRINGER MANNHEIM GMBH) 29 August 1991 (1991-08-29)
- D6: WO 98 11104 A (BOEHRINGER MANNHEIM GMBH; ELTZ HERBERT VON DER (DE); MUEHLEGGGER KL) 19 March 1998 (1998-03-19)

Novelty

D1 discloses a compound wherein $R=R^1=R^3=H$ and R^2 is a substituted heterocyclyl, which falls within the scope of claims 2, 16 and 23.

D2 discloses several exemplary compounds with the following structural features: R is methyl, iso-hexyl, n-dodecyl, cyclohexyl, phenylethyl, furfuryl, phenyl, naphthyl or phenylmethyl, R^2 is substituted or unsubstituted pyridine, R^1 is hydrogen, R^3 is substituted or unsubstituted phenyl. These compounds are encompassed by claims 2, 16 and 23.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/03280

D3 discloses exemplary compounds which contain the following structural features: R is H; R² is a substituted or unsubstituted 3-indolyl; R¹-N-R³ form together a 1-benzimidazolyl (D3: e.g. example 15 on page 13); R¹-N-R³ form together a 1-indolyl (D3: e.g. example 46 on page 20). These compounds are within the scope of claims 2, 16 and 23.

D3 also discloses a synthesis according to claim 13 (e.g. line 35-44, page 5).

D4 discloses exemplary compounds which contain the following structural features: R is methyl, cyclopentyl, isobutyl or isopropyl; R² is a substituted or unsubstituted 3-indolyl; R¹-N-R³ form together a substituted or unsubstituted 1-benzimidazolyl, 1-indolyl, 1-(1,2,4-triazolyl), 1-tetrazolyl, 1-benzotriazolyl, 1-imidazolyl, 1-indazolyl (D4: e.g. compounds 67, 68 and 81-83 on page 9; examples 10-10.5 on page 12). These compounds are encompassed by claims 2, 12, 16 and 23.

D5 discloses exemplary compounds with the following structural features: R is substituted or unsubstituted phenyl, cyclohexyl, 4-pyridinyl, cyanomethyl, pentyl, isopropyl, cyclopropyl, methyl or butyl; R² is a substituted or unsubstituted 3-indolyl; R¹/R³ are substituted or unsubstituted butyl, methyl, hydrogen, methoxy, phenyl or isoxazolyl; or R¹-N-R³ form together a substituted or unsubstituted 1-pyrrolidinyl, 9-guanyl, 9-adenyl, 9-purinyl, 1-piperidinyl, 1-piperazinyl, 1-benzimidazolyl, 1-indolyl or anilino (D5: e.g. compounds 13, 14, 16, 27-29, 32 and 37-39 on page 9; examples 1.6-1.10, 1.12-1.20, 3, 4 and 5 on pages 9-10). These compounds are within the scope of claims 2, 5, 12, 16 and 23.

D6 discloses compounds with the following structural features: R= hydrogen; R² is a substituted tetrahydrofuran-2-yl; R¹ is hydrogen; R³ is a substituted pentyl (D6: e.g. examples 4-6 and 15 on pages 10, 11 and 15). These compounds are relevant to the novelty of claims 2, 16 and 23.

D3-D5 disclose the use of the above mentioned compounds as active substances in pharmaceutical compositions (claim 17).

Therefore the subject-matter of claims 2, 5, 12, 13, 16, 17 and 23 is not novel.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/03280

In claims 18 to 21 potentially any method for the treatment of a disease within the medical indication fields, mood disorders, neurotraumatic diseases, cancer or hair-loss, which comprise the administration of a pharmaceutically active substance, is claimed.

Since the GSK-3 inhibition efficacy of most active compounds used in these indication fields is not known and no specification limits or testing conditions are given, it would not even be possible to decide according to objective criteria, whether a test-result could be regarded as positive or negative, if the assay were carried out (i.e. if a given compound actually is a GSK-3 inhibitor or not).

Since methods for the treatment of the mentioned diseases which comprise the administration of a pharmaceutically active substance already exist, and any substance not tested so far has to be considered as a potential GSK-3 inhibitor, the subject-matter of claims 18-21 can not be regarded as new.

The same reason holds for claim 22.

Claims 1 and 14-15 are formulated the other way round: Here, substantially any method which comprises the administration of a compound of formula (I) is claimed, since it can never be ruled out that a certain disease is not associated with GSK-3 inhibition.

Since the treatment of certain diseases with compounds encompassed by formula (I), such as e.g. cardiovascular diseases, immunological and allergic diseases have already been reported in e.g. D3-D5, the subject-matter of claims 1 and 14-15 can neither be regarded as novel.

Therefore the subject matter of claims 1, 2, 5 and 12-23 is not novel and does not fulfill the requirements of Art. 33(2) PCT.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/03280

Inventive Step

The applicant suspects a connection between GSK-3 inhibition and several diseases of very different medical indication fields, such as cancer, hair loss, diabetes, Alzheimer's disease, acute stroke, etc..

Indications already reported for related compounds or even for compounds encompassed by the above mentioned claimes are not included in this list: such as inflammatory, immunologic, bronchopulmonary, cardiovascular (althought related to acute stroke) and allergical diseases (e.g. D3: line 10, page 3; D4: line 30, page 8 and line 58, page 15; D5: line 41, page 8 and line 28, page 14).

Different, very broad groups of compounds are claimed, excluding already known substances. These groups are linked together by the common inventive concept that they all should be GSK-3 inhibitors. Nonetheless, no suporting data is presented in the description. It is only stated on page 34 that the IC_{50} values of the most potent compounds range between 10 and 100 nM, without saying which of the claimed compounds were actually tested and without giving individual results compared to other already known structurally related drug substances. Such data would make possible to assess whether all claimed groups of compounds can be expected to show the desired effect (i.e. a higher GSK-3 inhibition efficiency that already known drug substances with similar structure).

Therefore present subject matter does not fulfill the requirements on inventiveness according to Art. 33(3) PCT.

It is pointed out in this context that the discovery of an enzyme inhibition as such is not an invention but a discovery. Claimes formulated like claim 1, 14-15 and 18-22, in which a disease or a group of compounds is defined by their relation to GSK-inhibition could not be regarded as inventive, even if the above mentioned data is supplied.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/03280

Industrial Applicability

For the assessment of present claims 1, 18-22 on the question whether they are industrially applicable, no unified criteria exist in the PCT Contracting States. The patentability can also be dependent upon the formulation of the claims. The EPO, for instance, does not recognize as industrially applicable the subject-matter of claims to the use of a compound in medical treatment, but may allow claims to a known compound for first use in medical treatment and the use of such a compound for the manufacture of a medicament for a new medical treatment.

Re Item VI

Certain documents cited

Reference is made to the following P-documents:

D7: WO 00 06564 A (JAPAN TOBACCO INC; INABA TAKASHI (JP); SAKODA KENJI (JP); TANAKA M) 10 February 2000 (2000-02-10)

D8: WO 99 57117 A (ASTA MEDICA AG) 11 November 1999 (1999-11-11)

The priority documents of present application were not checked at the time of establishing this report. The P-documents could become relevant in an EPC examination.

Re Item VII

Certain defects in the international application

The description does not mention the relevant prior art represented by the above cited documents as required by Rule 5.1(a)(ii) and (iii) PCT.

Re Item VIII

Certain observations on the international application

In claims 1, 14, 15 and 18-22 a group of diseases or compounds are defined by their relation to GSK-3 inhibition, like in the wording "... conditions associated with a need for inhibition of GSK-3" or the expression "... a GSK- 3 inhibitor".

These definitions are functional definitions, i.e. formulations attempting to define the subject matter in terms of a desired property instead of indicating precisely the technical measures (i.e. in this case chemical structures) specifically designed to solve the problem (i.e. the actual medical indications) and do not precisely define the scope of the claims for which protection is sought.

Therefore the above mentioned claims are not clear and concise.

It can not be expected from future researchers to carry out a GSK-3 inhibition test to make sure that new compounds are no GSK-3 inhibitors or to investigate for each disease under study if it might be related to GSK-3 inhibition, in order to clarify whether a possible commercial use is likely to infringe the patent.

It follows that said claims falls foul of the clear provision not only of Rule 13(4) but also of Article 6 PCT.

Contrary to Rule 6.2(a) PCT reference is made to lists of excluded compounds which are included in the description (lists B, D', L' and A on pages 10, 16, 23 and 9).

INTERNATIONAL SEARCH REPORT

International application No.

PCT/GB 99/03280

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 1, 18-21
because they relate to subject matter not required to be searched by this Authority, namely:
Remark: Although claims 1, 18-21
are directed to a method of treatment of the human/animal
body, the search has been carried out and based on the alleged
effects of the compounds.
2. ☒ Claims Nos.: not applicable
because they relate to parts of the International Application that do not comply with the prescribed requirements to such
an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all
searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment
of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report
covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is
restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: not applicable

In view of the extremely broad Markush claims, the search was executed with due regard to the PCT Search Guidelines (PCT/GL/2), C-III, paragraph 2.1, 2.3 read in conjunction with 3.7 and Rule 33.3 PCT, i.e. particular emphasis was put on the inventive concept i.e. glycogen synthase kinase-3 inhibitors having the structure of formula (I).

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 99/03280

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 3335147	A	08-08-1967	NONE	
EP 0328026	A	16-08-1989	AT 88704 T	15-05-1993
			AU 2965889 A	10-08-1989
			CA 1320194 A	13-07-1993
			CZ 8900752 A	13-12-1995
			DK 55889 A	11-08-1989
			ES 2054890 T	16-08-1994
			FI 890652 A,B,	11-08-1989
			HU 49348 A,B	28-09-1989
			IE 63489 B	03-05-1995
			IL 89167 A	27-02-1994
			JP 1233281 A	19-09-1989
			JP 1994298 C	22-11-1995
			JP 7030071 B	05-04-1995
			MC 2010 A	16-02-1990
			MX 14871 A	01-09-1993
			NO 890568 A,B,	11-08-1989
			NZ 227850 A	26-11-1991
			PH 25185 A	27-03-1991
			PT 89661 A,B	04-10-1989
			SK 75289 A	06-05-1998
			SU 1799382 A	28-02-1993
			US 5057614 A	15-10-1991
			YU 28489 A	30-06-1991
			ZA 8900865 A	25-10-1989
DE 4005969	A	29-08-1991	AU 7301191 A	18-09-1991
			WO 9113071 A	05-09-1991
DE 4005970	A	29-08-1991	AU 7301591 A	18-09-1991
			WO 9113070 A	05-09-1991
WO 9811104	A	19-03-1998	DE 19637042 A	19-03-1998
			EP 0927180 A	07-07-1999
WO 9741854	A	13-11-1997	AU 2819397 A	26-11-1997
WO 9816528	A	23-04-1998	AU 4920397 A	11-05-1998
WO 0006564	A	10-02-2000	NONE	
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